

-11

AC

WHAT IS CLAIMED IS:

Dumb 1. A debugging circuit capable of debugging a plurality of possible microprocessors, comprising:
2 a debug port;
3 a plurality of microprocessor sockets, each of said microprocessor sockets
4 adapted to receive a microprocessor;
5 a plurality of switches, each of said plurality of switches corresponding to a
6 respective one of said plurality of microprocessor sockets;
7 wherein said plurality of microprocessor sockets are adapted to form a serial
8 signal path, and wherein each of said switches is capable of automatically detecting whether a
9 microprocessor is present in the corresponding microprocessor socket, and if a
10 microprocessor is present in said corresponding microprocessor socket then said switch is
11 automatically configured to include said microprocessor within said signal path, and if a
12 microprocessor is not present in said corresponding microprocessor socket then said switch is
13 automatically configured so that said signal path bypasses said corresponding microprocessor
14 socket.
15

1 2. The debugging circuit according to claim 1, wherein a debugging input is
2 provided to each microprocessor socket, and wherein a debugging output is provided from
3 each microprocessor that is present in said corresponding microprocessor socket.

X/12

AB

Dumb Bl  3. The debugging circuit according to claim 2, wherein each switch receives as an input a microprocessor detection signal indicating whether said corresponding microprocessor is present.

1 4. The debugging circuit according to claim 3, wherein for each switch, if said 2 microprocessor is present then said switch provides as an output said debugging output of 3 said corresponding microprocessor.

1 5. The debugging circuit according to claim 4, wherein for each switch, if said 2 microprocessor is not present, then said switch provides as a switch output said debugging 3 input to said corresponding microprocessor.

1 6. The debugging circuit according to claim 5, wherein for each switch not 2 corresponding to a last microprocessor in said serial signal path, said switch output is 3 provided as a debugging input to a subsequent microprocessor in said serial signal path.

1 7. The debugging circuit according to claim 6, wherein for said switch 2 corresponding to said last microprocessor in said serial signal path, said switch output is 3 provided to said debug port.

3/3

65

Pub Bl 1 1 8 The debugging circuit according to claim 7, wherein said debug port is
2 electrically coupled to a computer and receives input from and provides output to said
3 computer.

1 9. The debugging circuit according to claim 8, wherein said plurality of switches
2 each comprise a pair of bipolar transistors.

Pub Bl 2 1 10. The debugging circuit according to claim 8, wherein said plurality of switches
2 each comprise field effect transistors.

1 11. A debugging switch for use in a debugging circuit capable of debugging a
2 plurality of possible processors comprising:
3 a first node for receiving a processor detection signal indicating whether a first
4 processor is present in a corresponding processor socket;
5 a second node for receiving a debugging input signal to said first processor;
6 a third node for receiving a debugging output signal from said first processor
7 if said first processor is present in said corresponding processor socket;
8 a fourth node for providing a switch output signal; and
9 a switching element, wherein if said processor detection signal indicates that
10 said corresponding processor is not present, then said switching element is automatically
11 configured so that said switch provides as a switch output said debugging input signal, and
12 wherein if said processor detection signal indicates that said corresponding processor is

A 14

13 present then said switching element is automatically configured so that said switch provides
14 as a switch output said debugging output signal.

1 12. The debugging switch according to claim 11, wherein said switching element
2 further comprises first and second bipolar transistors.

1 13. The debugging switch according to claim 12, wherein said switching element
2 comprises field effect transistors.

1 14. The debugging switch according to claim 13, wherein said field effect
2 transistors are junction field effect transistors.

1 15. The debugging switch according to claim 13, wherein said field effect
2 transistors are insulated gate field effect transistors.

1 16. The debugging switch according to claim 11, wherein said switch output is
2 provided as a debugging input to a second processor.

sub 31 17. A method for debugging at least one of a plurality of possible
2 microprocessors, comprising the steps of:

515

AB

Part B1

3 providing a debugging circuit having a plurality of microprocessor sockets adapted to
4 form a serial signal path, wherein each microprocessor socket corresponds to a different one
5 of said plurality of possible microprocessors and is capable of receiving a microprocessor;
6 providing a switch corresponding to each of said microprocessor sockets;
7 providing as an input to each of said switches a processor detection signal indicating
8 whether a microprocessor is present in said corresponding microprocessor socket;
9 providing as an input to each of said switches a processor debugging input for said
10 corresponding microprocessor;
11 providing as an input to each of said switches a processor debugging output from said
12 corresponding processor if said microprocessor is present in said corresponding
13 microprocessor socket;
14 said switch providing as a switch output said processor debugging input if said
15 corresponding microprocessor is not present in said corresponding microprocessor socket,
16 and providing as a switch output said processor debugging output if said microprocessor is
17 present in said corresponding microprocessor socket.

1 18. The method according to claim 17, further comprising the step of:
2 for each switch corresponding to a microprocessor that is not a last microprocessor in
3 said serial signal path, providing said switch output as a debugging input to a subsequent
4 microprocessor in said serial signal path.

1 19. The method according to claim 18, further comprising the step of:

-816

AB

Aut B2  for said switch corresponding to said last microprocessor in said serial signal path,
3 providing said switch output to a debug port.

1 20. The method according to claim 19, further comprising the step of:
2 providing as a debugging input to a first microprocessor in said serial signal path a
3 signal received from said debug port.

1 21. The method according to claim 20, wherein said switches each comprise a pair
2 of bipolar transistors.

1 22. The method according to claim 20, wherein said switches each comprise field
2 effect transistors.

DOCKET # 016295.0620